Research

Computational Thinking Enters the Mainstream

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Some Ideas about Computational Thinking

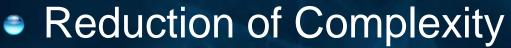
for solving very hard, important problems...

Research



- Hypothesis
 - + Experimentation

+ Computation New Method



- Way too much info to process in old ways
- Enables playing with "the full deck" to accomplish what was previously impossible
- Multidisciplinary perspective
- True for Biology, Art, Datamining, Economics, etc.

Scientific

Method







Microsoft Research/Camegie Mellon Center for Computational Thinking

- Good results as applied to a variety of subjects
- Defining what it means to think computationally
- Strong interest: other institutions, gov't agencies
- Entering third year of this collaboration

Evolution of Computational Thinking

- Exploratory first rounds of collaboration, many areas:
 - Bioinformatics
- Privacy

Art

Education

- Auction Theory
 Kidney Exchange

Music

Pharmaceutical Development

- Third year
 - Focusing on high-impact work
 - Basing approach on successful investigations

Computational Thinking As It Matures

What we will see today – applied to a wide range of disciplines...

- Peter Lee The Spread of Computational Thinking
- Guy Blelloch Parallel Thinking
- Chris Langmead Computational Drug Discovery
- Roger Dannenberg Music Performance in the Computational Age
 - Golan Levin Art and Code

Research

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